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Our ref: KON-1694 Client's ref: KPD-4930 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: K. OHMURA, et al		Group : 1756
Serial No. : 10/014,655		Examiner: Christopher D. Rodee
Filed : December 11, 2001		
For : Toner for Developing Static Latent Image to Form Color Image		

DECLARATION

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S i r:

I, Ken Ohmura, hereby declare and say as follows:

1. I am one of the named Inventors in the instant Application.

2. I earned a Masters Degree in Material Science from the University of Electro Communications in Tokyo, Japan in March of 1988. Since April of that year, I have been employed by Konica Corporation, the Assignee of the above-identified Application. During my tenure at Konica, I have been engaged in research and development in the fields of photocopier developers and toners.

3. It has been brought to my attention that this Application has been rejected based on U.S. Patent No. 6,346,358 to Cheng (Cheng). In order to demonstrate the differences between the teachings in Cheng and the present Invention, tests have been performed and are presented herein. These tests have been performed by me or under my direct supervision and control.

4. A set of 11 toners made in accordance with the present Invention and, specifically, Examples 1-11, were prepared for purposes of comparison to the material of Cheng. Each one of the toners that were prepared in accordance with the present Invention are referred to in the attached Tables 3a, 4a and 5a as Examples 1-11. The material, in accordance with Examples I-IV of Cheng, were prepared. It will be noted that Example I of Cheng prepared a yellow toner, Example II of Cheng prepared a cyan toner, Example III of Cheng prepared a magenta toner and Example IV of Cheng prepared a black toner. Each one of these Examples in Cheng, I-IV, was followed in order to prepare toners in accordance with Cheng and to measure the difference in the redispersion electro-conductivity between the chromatic toners and the black toners. The amount of water used to wash in Cheng is not specifically identified. Therefore, I have chosen two different amounts of water for washing Cheng's toner. I chose

water in the amount of 10 times the weight of the solid component and I also washed the toner in 100 times the amount of the solid component used. In Tables 3a and 4a, material that was washed in 10 times the amount of toner weight is labeled (A)*. The material which was washed in 100 times the toner weight is labeled (B)**.

5. For each one of the colored particles which were prepared in Examples 1-11 of the present Invention, as well as to each one of Cheng's colored particles prepared in Examples I-IV and washed in the two separate manners, a negatively chargeable toner was obtained by adding the colored particles to 1.0 percent by weight of a hydrophobic silicon particle (number average primary particle size of 10 nm, hydrophobicity of 63) as well as 0.8 percent by weight of a hydrophobic titanium oxide particle (number average primary particle size of 25 nm, hydrophobicity of 60). Each resulting composition was stirred employing a Henschel mixer as described in the instant Application in the paragraph bridging pages 74 and 75. Using these chargeable toners, measurements were made to determine their redispersion electro-conductivity. The redispersion electro-conductivity of each of the chargeable toners prepared is recorded in Tables 3a and 4a.

6. As can be seen in Tables 3a and 4a attached, the difference in the redispersion electro-conductivity between the chromatic toners and the black toner for Cheng's material is in the range of -0.4 to 0.4. This is outside the range of the difference of redispersion electro-conductivity as recited in the claims of this Application.

7. Each one of the sets of toners was used in accordance with the Specification as recited on pages 80 to 83 and tested in accordance with the tests outlined on pages 80-83. It will be noted that, for Cheng's material, four different combinations of sets of toners were employed. In "Cheng's Example (a)", all of the toner particles had been washed with 10 times the amount of water to toner weight. In "Cheng's Example (b)", all the toner particles were washed with water in an amount of 100 times the weight of the toner particles. In "Cheng's Example (c)" the black toner was washed with water in an amount of 10 times the weight of toner and the chromatic toners were washed in water in an amount of 100 times the weight of toner. In "Cheng's Example (d)" the black toner was washed with water in an amount of 100 times the weight of toner and the chromatic toners were washed in water in an amount of 10 times the weight of toner.

8. The test results from the sets of toners are reported in Table 5a. As can be seen in Table 5a, Cheng's material is clearly different from the present Invention and, specifically, it can be seen that, in the fine dot evaluation, the low temperature, low humidity color difference and in the high temperature, high humidity fogging there are dramatic differences. It can also be seen that the difference between the low temperature, low humidity and high temperature, high humidity for 10% dot density and line width is small for the present Invention while this difference is fairly large for Cheng.

It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under section 18 U.S. Code 1001, and that such will false statements may jeopardize the validity of this Application or any patent issuing thereon.

Ken Ohmura

Dated: This day of , 2003.

DCL/mr

Encl: Tables 3a, 4a and 5a.

Table 3a

	Black Toner				Yellow Toner		
	Toner	re-dispersion electro-conductivity ρbk (μS/cm)	The number of free colorant particles	Light absorbance at 500 nm	Toner	re-dispersion electro-conductivity ρy (μS/cm)	ρy - ρbk (μS/cm)
Example 1	1Bk	2.6	1	0.008	1Y	12.4	10.3
Example 2	2Bk	9.1	0	0.004	2Y	10.2	1.1
Example 3	3Bk	8.4	6	0.076	3Y	19.5	11.1
Example 4	4Bk	4.1	1	0.085	4Y	8.5	4.4
Example 5	5Bk	9.1	7	0.009	5Y	9.9	0.8
Example 6	6Bk	3.8	2	0.009	6Y	11.1	7.3
Example 7	7Bk	2.8	3	0.008	7Y	10.9	8.1
Example 8	8Bk	2.9	2	0.007	8Y	12.5	9.6
Example 9	9Bk	3.1	2	0.008	9Y	11.5	8.4
Example 10	10Bk	2.7	1	0.006	10Y	12.6	9.9
Example 11	11Bk	2.5	2	0.007	11Y	3.8	1.3
Cheng's Example (a)	IV (A)*	1.4	1	0.002	I (A)*	1.2	-0.2
Cheng's Example (b)	IV (B)**	1.1	0	0.001	I (B)**	1.0	-0.1
Cheng's Example (c)	IV (A)*	1.4	1	0.002	I (B)*	1.0	-0.4
Cheng's Example (d)	IV (B)**	1.1	0	0.001	I (A)**	1.2	0.1

Table 4a

	Magenta Toner			Cyan Toner			ρ(max) - ρ(min) (μS/cm)
	Toner	re-dispersion electro-conductivity ρm (μS/cm)	ρm - ρbk (μS/cm)	Toner	re-dispersion electro-conductivity ρc (μS/cm)	ρc - ρbk (μS/cm)	
Example 1	1M	12.3	9.7	1C	11.1	8.5	9.8
Example 2	2M	10.1	1.0	2C	11.1	2.0	2.0
Example 3	3M	18.9	10.5	3C	20.4	12.0	12.0
Example 4	4M	8.8	4.6	4C	8.4	4.3	4.3
Example 5	5M	10.1	1.0	5C	10.1	1.3	0.8
Example 6	6M	11.8	8.0	6C	11.5	7.7	8.0
Example 7	7M	12.2	9.4	7C	12.4	9.6	9.6
Example 8	8M	12.9	10	8C	11.5	8.6	10.0
Example 9	9M	11.8	8.7	9C	12.2	9.1	9.1
Example 10	10M	11.6	8.9	10C	11.8	9.1	9.9
Example 11	11M	3.9	1.4	11C	4.1	1.6	1.6
Cheng's Example (a)	III (A)*	1.1	-0.3	II (A)*	1.3	-0.1	0.3
Cheng's Example (b)	III (B)**	1.0	-0.1	II (B)**	1.0	-0.1	0.1
Cheng's Example (c)	III (B)**	1.0	-0.4	II (B)**	1.0	-0.4	0.4
Cheng's Example (d)	III (A)*	1.1	0	II (A)*	1.3	0.2	0.2

(A)*: Amount of washing water is 10 times of toner weight.

(B)**: Amount of washing water is 100 times of toner weight.

Table 5a

	10% dot density		Line width (μm)		Character clogging		Fine dot scattering		Color difference		Fogging	
	L. T. L. H.	H. T. H. H.	L. T. L. H.	H. T. H. H.	L. T. L. H.	H. T. H. H.	L. T. L. H.	H. T. H. H.	L. T. L. H.	H. T. H. H.	L. T. L. H.	H. T. H. H.
Example 1	0.11	0.12	190	191	A	A	A	A	A	A	A	A
Example 2	0.1	0.11	190	191	A	A	A	A	A	A	A	A
Example 3	0.11	0.12	191	192	A	B	A	B	A	A	A	B
Example 4	0.09	0.12	191	193	A	A	A	A	A	A	A	A
Example 5	0.09	0.12	190	193	A	A	A	B	A	A	A	A
Example 6	0.11	0.13	191	192	A	A	A	A	A	A	A	A
Example 7	0.12	0.15	190	193	A	A	A	B	A	A	A	A
Example 8	0.14	0.17	191	195	A	B	A	B	A	B	A	A
Example 9	0.15	0.18	192	196	A	B	A	B	A	B	A	B
Example 10	0.12	0.16	191	194	B	B	B	B	B	B	A	B
Example 11	0.12	0.17	195	198	A	B	B	B	B	B	A	B
Cheng's Example (a)	0.06	0.15	179	191	A	B	C	C	C	B	B	C
Cheng's Example (b)	0.06	0.15	176	189	A	A	C	C	C	A	B	C
Cheng's Example (c)	0.06	0.15	178	189	A	A	C	C	C	A	B	C
Cheng's Example (d)	0.06	0.15	177	190	A	B	C	C	C	B	B	C